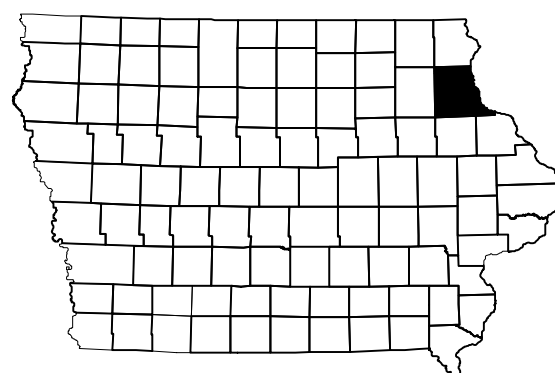


IOWA DEPARTMENT OF NATURAL RESOURCES

CONSTRUCTION DOCUMENTS FOR PIKES PEAK STATE PARK WELL REPLACEMENT CLAYTON COUNTY, IOWA

PROJECT #06-03-22-02

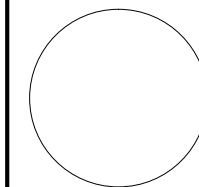


	I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.
	BRETT A. JOHNSON, IOWA REG. NO. 13653 DATE MY LICENSE RENEWAL DATE IS DECEMBER 31, 2015
	PAGES OR SHEETS COVERED BY THIS SEAL: SHEETS 1-7

SHEET INDEX

1	COVER SHEET
2	VICINITY MAPS
3	QUANTITIES & GENERAL NOTES
4	SITE PLAN
5	WELL DETAIL
6	WELL DETAIL
7	WELL PLUGGING DETAILS

CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



COVER SHEET

WELL REPLACEMENT PROJECT FOR:

PIKES PEAK STATE PARK

CLAYTON COUNTY, IOWA

NO.	BY	REVISION

DRAWN BY: PROJECT NUMBER:
CHK'D BY: DATE: 06-03-22-03
2/27/2014

SHEET NO:

1

DIRECTORY

PROJECT MANAGER

COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES
ADDRESS	502 EAST 9TH STREET
CITY, STATE, ZIP	DES MOINES, IA 50319
CONTACT	BRETT JOHNSON
TELEPHONE	515-250-3711
FAX	515-281-8685
EMAIL	brett.johnson@dnr.iowa.gov

CONSTRUCTION INSPECTOR

COMPANY	IOWA DEPARTMENT OF NATURAL RESOURCES
ADDRESS	956 EAST MAIN STREET
CITY, STATE, ZIP	NEW HAMPTON, IA 50659
CONTACT	MEL PACOVSKY
TELEPHONE	319-240-3553
FAX	641-394-5105
EMAIL	melvin.pacovsky@dnr.iowa.gov

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF DRILLING A NEW WATER SUPPLY WELL, INSTALLING NEW PIPE CONNECTIONS TO THE EXISTING WELL HOUSE WITHIN THE CONCESSION BUILDING, REPLACING DETERIORATED COMPONENTS WITHIN THE WELL HOUSE, PLUGGING THE EXISTING WELL, SEEDING/FERTILIZING/MULCHING ALL DISTURBED AREAS, AND INCIDENTAL WORK AS REQUIRED BY THE DNR CONSTRUCTION INSPECTOR.

AUTHORIZATION TO BID

AUTHORIZATION - PARKS | WILDLIFE | FISHERIES | LAW ENFORCEMENT | FORESTRY DATE

ENGINEERING BUREAU CHIEF

DATE

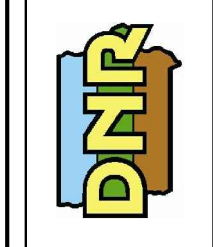
ESTIMATED PROJECT QUANTITIES			
ITEM NO.	ITEM	UNIT	TOTAL
1	CLEARING AND GRUBBING	LS	1
2	DRILL 14.75' HOLE FROM 0' TO ESTIMATED 40'	LF	40
3	FURNISH & INSTALL ESTIMATED 41' OF 13" TEMPORARY CASING	LF	41
4	GROUT SURFACE CASING WITH SACKS OF EZ SEAL GROUT	EA	5
5	DRILL 12.5" DIAMETER HOLE FROM ESTIMATED 40' TO ESTIMATED 505'	LF	465
6	FURNISH & INSTALL ESTIMATED 506' OF 8" ODx0.322 WALL, A53B STEEL CASING	LF	506
7	GROUTING EQUIPMENT SETUP (INCLUDES BOTTOM CASING PACKER)	LS	1
8	FURNISH & INSTALL ESTIMATED 275 SACKS OF NEAT CEMENT GROUT	EA	275
9	DRILL 7.875" HOLE FROM 505' TO ESTIMATED 650'	LF	145
10	CLEAN BOTTOM OF WELL OF DEBRIS, AIR LIFT, & DEVELOP FOR 1 HOUR	LS	1
11	FURNISH & INSTALL TEST PUMP (50-75 GPM) AND TEST PUMP WELL	HOURS	8
12	CHLORINATE WELL, COLLECT GEOLOGIC SAMPLES & SUBMIT IGS & IDNR REPORTS	LS	1
13	FURNISH & INSTALL PITLESS UNIT	LS	1
14	INSTALL STATIC WATER LEVEL LINE & GAGE	LS	1
15	FURNISH & INSTALL 15 HP SINGLE PHASE SUBMERSIBLE PUMP, MOTOR & SCH 80 DROP PIPE	LS	1
16	ELECTRIC SERVICE (COPPER) TO WELL IN CONDUIT FROM WELL HOUSE POWER PANEL	LS	1
17	FURNISH & INSTALL 2" CL 160 PVC WATER LINE FROM WELL TO INSIDE WELL HOUSE	LF	60
18	INSTALL WELL BLOW-OFF ASSEMBLY IN WELL HOUSE	LS	1
19	REPLACE & DISPOSE EXISTING PRESSURE TANKS	EA	2
20	FURNISH & INSTALL OUTSIDE FROST-FREE WATER FAUCET	EA	1
21	CONNECT NEW WATER SUPPLY TO EXISTING WITH NEW PIPING & REQUIRED WATER SAMPLING BIBS	LS	1
22	RECONNECT EXISTING CHLORINATION SYSTEM & PROVIDE SMALL DAY TANK AS REQUIRED	LS	1
23	REMOVE EXISTING PUMP & PLUG WELL	LS	1
24	SEED, FERTILIZE, & MULCH ALL DISTURBED AREAS	LS	1
25	MOBILIZATION	LS	1

ESTIMATE REFERENCE INFORMATION	
ITEM NO.	DESCRIPTION
1	CONTRACTOR TO CLEAR EXISTING VEGETATION AS NECESSARY FOR CONSTRUCTION. COORDINATE WITH DNR INSPECTOR.

GENERAL NOTES

1. TWO WEEKS PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY:
 - A. IOWA DNR PROJECT MANAGER: BRETT JOHNSON 515-250-3711
 - B. DISTRICT INSPECTOR: MEL PACOVSKY 319-240-3553
2. THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ABOVE MENTIONED CONTACTS OF ANY DISCREPANCIES.
3. THE LOCATIONS AND DIMENSIONS SHOWN ON THE PLANS FOR EXISTING FACILITIES ARE IN ACCORDANCE WITH AVAILABLE INFORMATION WITHOUT UNCOVERING AND MEASURING. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION OR THAT ALL EXISTING UNDERGROUND FACILITIES ARE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL PUBLIC AND/OR PRIVATE UTILITIES SERVING THE AREA TO DETERMINE THE PRESENT EXTENT AND LOCATION OF THEIR FACILITIES BEFORE BEGINNING WORK.
4. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROPER UTILITY IMMEDIATELY UPON BREAKING OR DAMAGE TO ANY UTILITY LINE OR APPURTENANCE, OR THE INTERRUPTION OF THEIR SERVICE. HE SHALL NOTIFY THE PROPER UTILITY INVOLVED. IF EXISTING UTILITY LINES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED.
5. CONTRACTOR TO PROTECT ALL UTILITY, PAVING, BUILDINGS, ETC. OUTSIDE OF LIMITS OF PROPOSED CONSTRUCTION.
6. CONTRACTOR SHALL SEED, FERTILIZE AND MULCH ALL DISTURBED AREAS. USE CLASS 'C' SEED MIX.
7. PROTECT EXISTING TREES AND VEGETATION OUTSIDE OF CONSTRUCTION CORRIDOR.
8. ANY SPOIL MATERIAL THAT MAY BE GENERATED DURING THE CONSTRUCTION SHALL BE DISPOSED OF AT A LOCATION THAT IS COORDINATED WITH THE DNR INSPECTOR. SAID MATERIAL IS CONSIDERED INCIDENTAL TO THE CONTRACT.
9. PROVIDE CONCRETE THRUST BLOCKS AT ALL ABRUPT CHANGES IN DIRECTION: TEES, BENDS DEAD ENDS AND HYDRANTS. THE COST OF THRUST BLOCKS SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS OF WORK AND WILL NOT BE PAID SEPARATELY.
10. FURNISH AND INSTALL DETECTABLE "WATER" AND "ELECTRIC" WARNING TAPE. THE COST OF THE WARNING TAPE SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS OF WORK AND WILL NOT BE PAID SEPARATELY.

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



WELL REPLACEMENT PROJECT FOR:

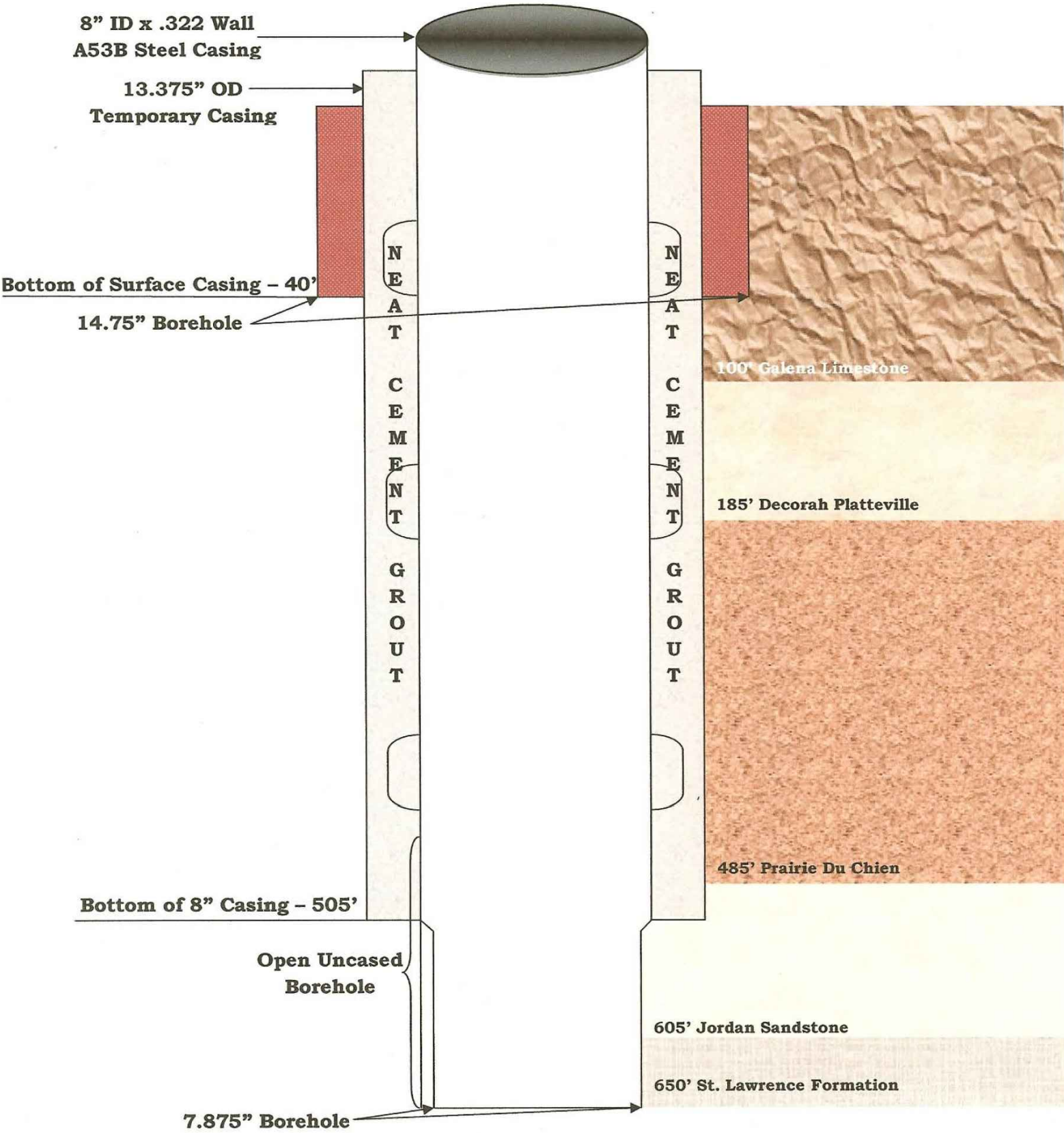
CLAYTON COUNTY, IDWA

NO.	BY DATE	REVISION
DRAWN BY:		PROJECT NUMBER: 06-03-22-03
CHK'D BY:		DATE: 2/27/2014
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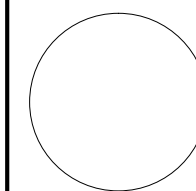
Anticipated Well Construction

8" Well

Pikes Peak State Park



CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



WELL DETAIL

WELL REPLACEMENT PROJECT FOR:

PIKES PEAK STATE PARK

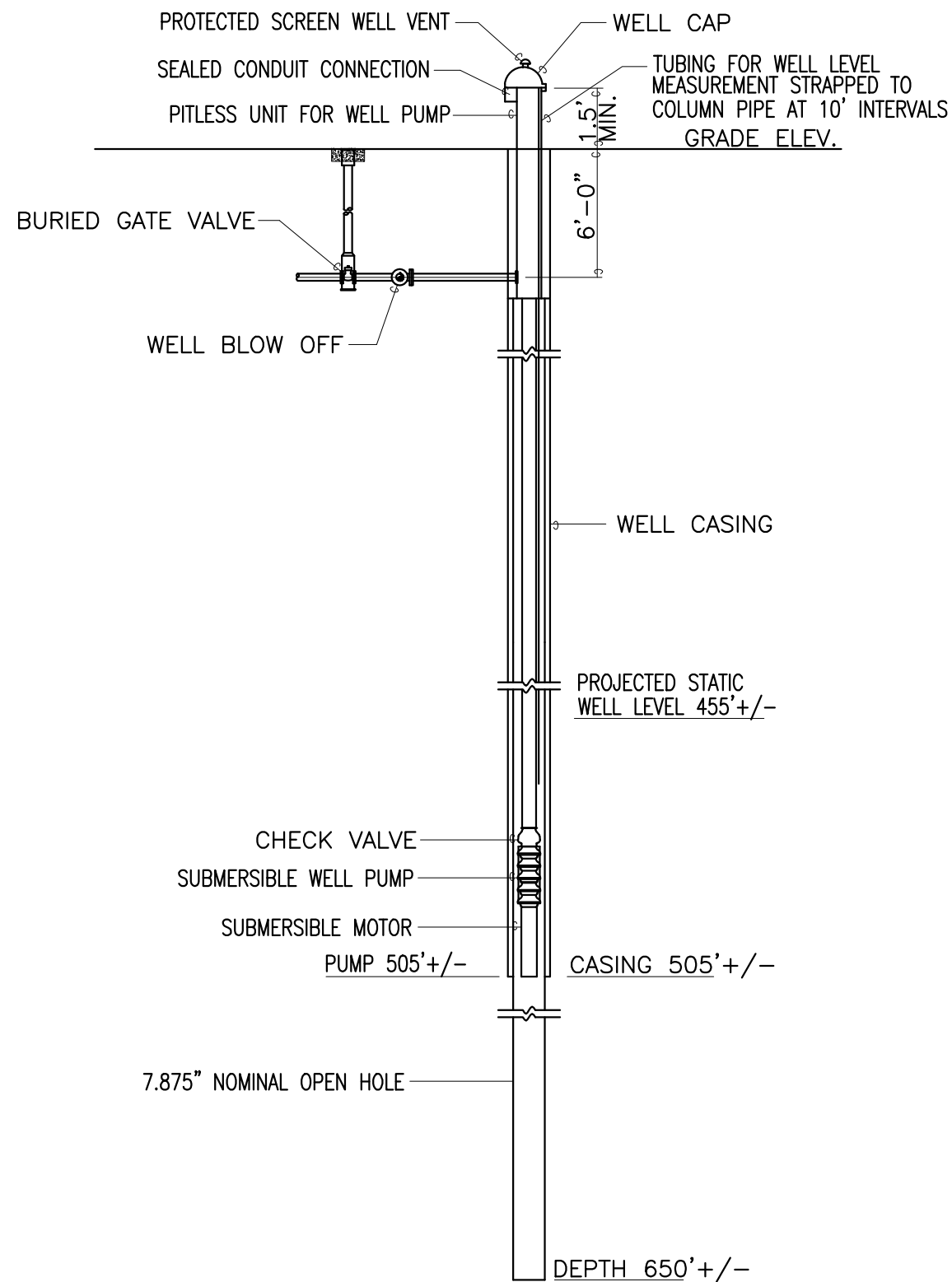
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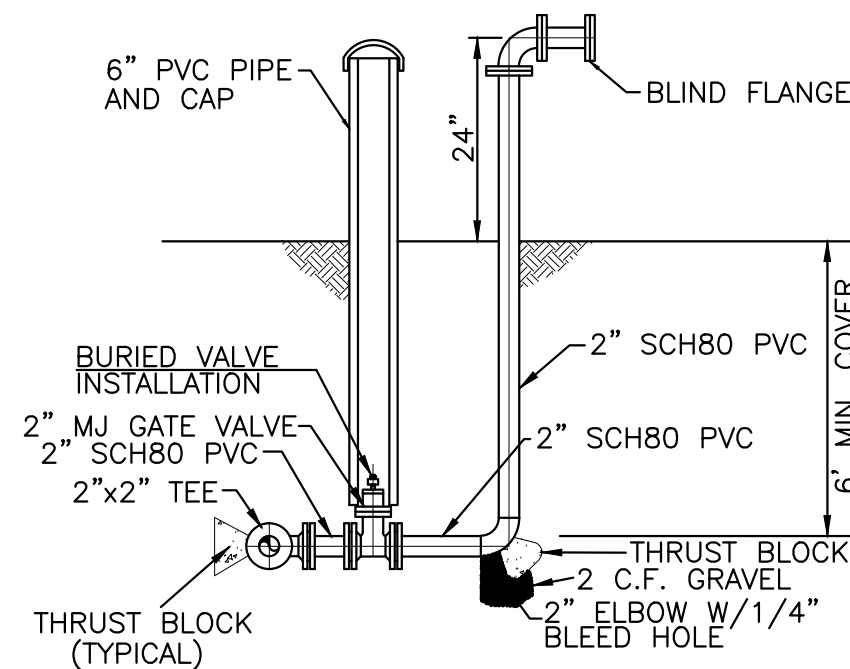
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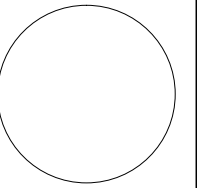


WELL DETAIL
NOT TO SCALE



WELL BLOW OFF
NOT TO SCALE

CONSULTANT:



**IOWA DEPARTMENT OF
NATURAL RESOURCES**
ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



WELL DETAILS

WELL REPLACEMENT PROJECT FOR:

PIKES PEAK STATE PARK

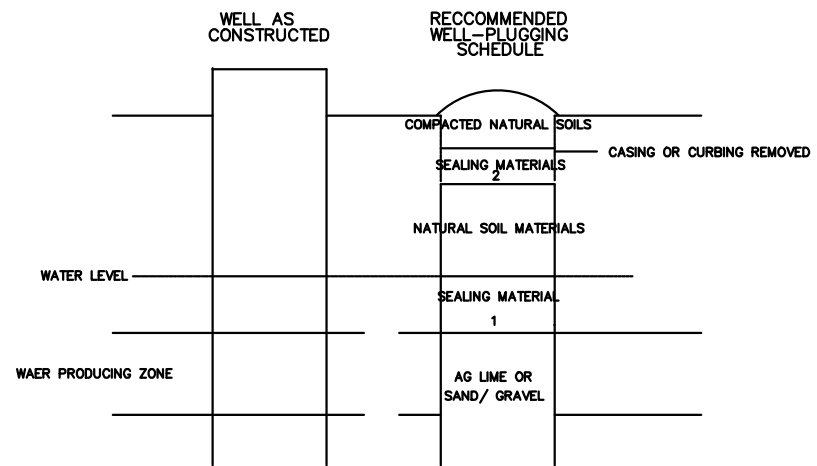
CLAYTON COUNTY, IOWA

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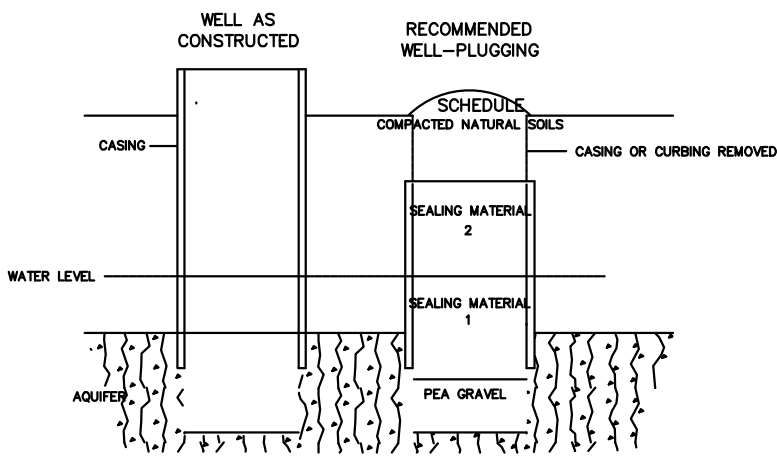
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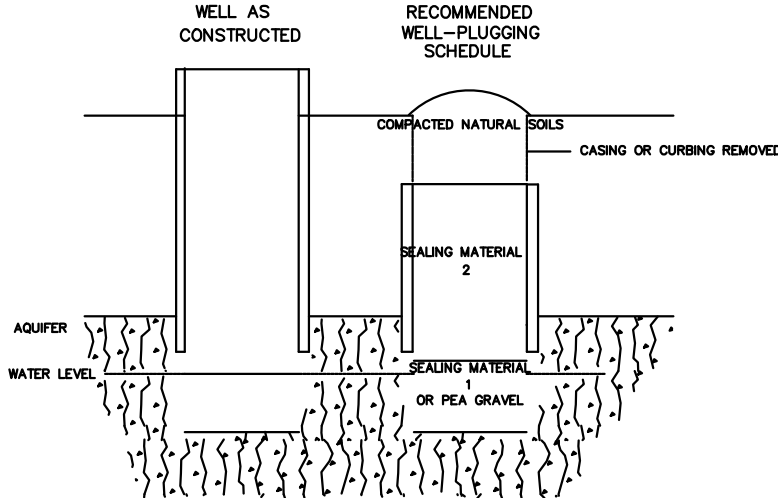
LARGE DIAMETER DUG OR BORED WELLS

1. GRADED BENTONITE, BENTONITE PELLETS, NEAT CEMENT
2. GRADED BENTONITE, BENTONITE PELLETS, NEAT CEMENT, SAND/CEMENT GROUT, CONCRETE



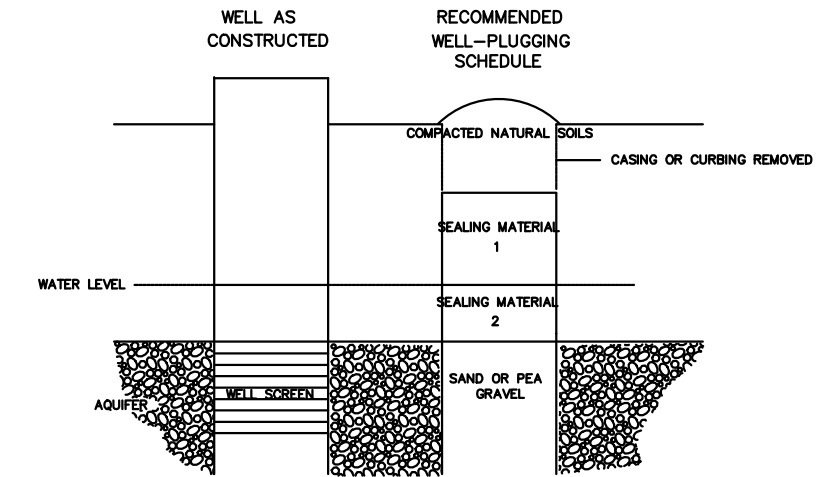
BEDROCK WELL IN CONFINED AQUIFER

1. BENTONITE PRODUCTS, NEAT CEMENT
2. BENTONITE PRODUCTS, NEAT CEMENT, SAND/GRAVEL GROUT, CONCRETE



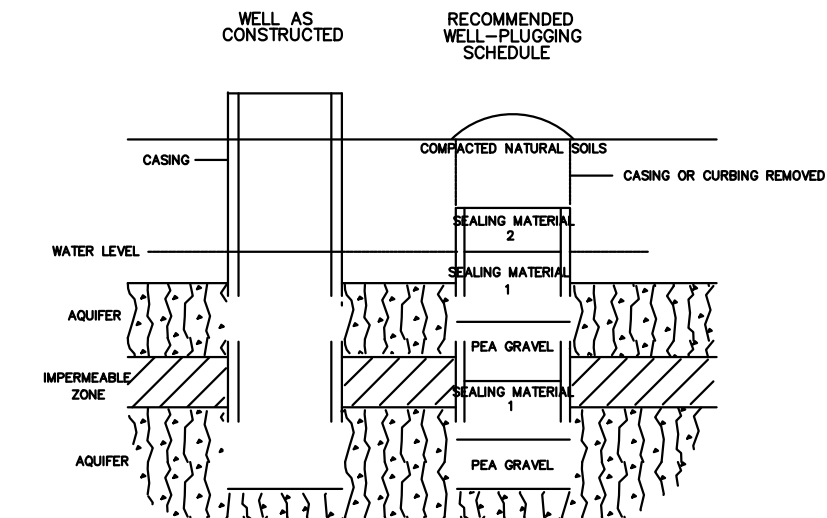
BEDROCK WELL IN UNCONFINED AQUIFER

1. BENTONITE PRODUCTS, NEAT CEMENT
2. BENTONITE PRODUCTS, NEAT CEMENT SAND/CEMENT GROUT, CONCRETE



ALLUVIAL AND GLACIAL-DRIFT WELLS

1. BENTONITE PRODUCTS, NEAT CEMENT
2. BENTONITE PRODUCTS, NEAT CEMENT, SAND/CEMENT GROUT, CONCRETE



LARGE DIAMETER DUG OR BORED WELLS

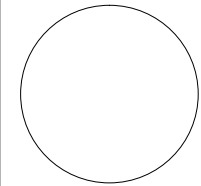
1. GRADED BENTONITE, BENTONITE PELLETS, NEAT CEMENT
2. GRADED BENTONITE, BENTONITE PELLETS, NEAT CEMENT, SAND/CEMENT GROUT, CONCRETE

NOMINAL (INCHES)	SCHEDULE OR STRENGTH	O.D. INCHES	I.D. INCHES	SECTION (FT ²)	GALLONS/ LINEAL FT.	SACKS/ FT.	LINEAL FT./ SACK
2	40	2.375	2.07	.023	.17	.021	47.83
	80	4.500	1.94	.021	.15	.019	52.38
4	40	4.500	4.02	.088	.66	.080	12.50
	80		3.82	.080	.60	.073	13.75
5	40	5.563	5.04	.139	1.04	.126	7.91
	80		4.81	.126	.95	.115	8.73
6	40	6.625	6.06	.201	1.50	.182	5.47
	80		5.76	.181	1.35	.165	6.08
8	30	8.625	8.07	.355	2.66	.323	3.10
	40		7.98	.347	2.60	.316	3.17
	80		7.62	.317	2.37	.288	3.47
10	30	10.75	10.13	.560	4.19	.510	1.96
	40		10.02	.548	4.10	.498	2.01
	XS		9.75	.519	3.88	.471	2.12
12	30	12.75	12.09	.797	5.96	.725	1.38
	STD		12.00	.785	5.88	.714	1.40
	40		11.93	.777	5.81	.707	1.42
14	STD	14.00	13.25	.957	7.16	.871	1.15
	XS		13.00	.922	6.90	.838	1.19
16	STD	16.00	15.24	1.268	9.49	1.153	.87
	XS		15.00	1.227	9.18	1.116	.90
18	STD	18.00	17.25	1.623	12.14	1.476	.68
20	STD	20.00	19.25	2.021	15.12	1.837	.54
24	STD	24.00	23.25	2.948	22.06	2.680	.37
30	STD	30.00	29.25	4.666	34.91	4.242	.24

REFERENCE: SEE IOWA DNR PUBLICATION SERIES NO. 15 FOR FURTHER DETAILS

WELL PLUGGING DETAILS

CONSULTANT:



IOWA DEPARTMENT OF
NATURAL RESOURCES

ENGINEERING SERVICES - WALLACE BUILDING
502 E. 9TH ST., DES MOINES, IA 50319-0034



WELL PLUGGING DETAILS

WELL REPLACEMENT PROJECT FOR:

PIKES PEAK STATE PARK

CLAYTON COUNTY, IOWA

NO. BY DATE REVISION

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